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## Conceptualizing and Measuring Safe, Stable, Nurturing Relationships and Environments in Educational Settings

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### Abstract

Most children and adolescents older than five years spend at least six hours of their day in school settings. Like parents, education professionals can promote health and protect youth from harm by providing safe, stable, nurturing relationships and environments. The Centers for Disease Control and Prevention (CDC) has developed a framework which posits that safe, stable, nurturing relationships and environments are *Essentials for Childhood* and are fundamental to promoting health and well-being; protecting youth from maltreatment and other violence and victimization; and ensuring optimal, healthy development. In this paper, the authors propose an approach to applying safe, stable, nurturing relationships and environments to the school ecology; review select survey measures to examine these constructs within educational settings; and suggest available indicators to measure safety, stability, and nurturance within the school context.

### Keywords

Child development; school; safety; nurturance; stability

### Introduction

Beginning in early childhood, children spend a minimum of six hours per day, or one-third to one-half of their weekday waking hours, in school settings with peers and education professionals, e.g., teachers, school counselors, school psychologists, and coaches, (U.S. Department of Education, 2007; 2011). Because of the quantity of time children spend in school and the long term impacts of school related outcomes, the school ecology is a critical developmental context affecting not only their academic outcomes, but also their overall

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health and mortality (Alliance for Excellent Education, 2006; Hahn & Truman, 2015; Wong, Shapiro, Boscardin, & Ettner, 2002). Although schools are socially envisioned as safe places for children to learn and grow, there is burgeoning concern about school environments and exposure to violence in these settings (Azeredo, Rinaldi, de Mores, Levy & Menezes, 2015; CDC, 2009; Page, Daniels, & Craig, 2015; Robers, Kemp, Truman & Snyder, 2012). For example in 2012, approximately 1.4 million youth aged 12–18 experienced non-fatal victimization in US schools; more than three quarters of a million of these were violent victimizations (e.g., physical or sexual assault, Morgan, Kemp, Rathbun, Robers, & Synder, 2013). However, education professionals are uniquely positioned to play an important role in providing relationships and environments that can promote optimal child development (Myers & Pianta, 2008) and violence prevention (Massey-Stokes & Lanning, 2003).

The Centers for Disease Control and Prevention's (CDC) *Essentials for Childhood* (EfC) framework posits that optimal child development, health, and well-being depend on a foundation of safe, stable, and nurturing relationships and environments. The quality of this early foundation, which is influenced by a number of ecological contexts, has important implications for future learning, behavior, health and quality of life outcomes (Hahn & Truman, 2015). Children who experience relationships and environments that promote these factors, individually and in combination, are more likely to build healthy brain architecture and less likely to experience toxic stress in their environment (Conger, Schofield, Nepl, & Merrick, 2013; Dixon, Browne, & Hamilton-Giachritsis, 2009; Mercy & Saul, 2009; Shonkoff, Boyce, & McEwen, 2009). They also may be less likely to be victims and perpetrators of school violence (Estrada, Gilreath, Astor & Benbenishty, 2013; Hill et al., 1999), have higher emotional intelligence (Elipé, Del Rey, & Ortega-Ruiz, 2015) and higher academic achievement (Hurd & Sellers, 2013).

Given the salience of the educational environment in children's lives and the national interest in prevention strategies for familial, school, and community violence (Attorney General's National Task Force on Children Exposed to Violence, 2012), a public health promotion approach such as the *Essentials for Childhood* framework can help identify protective factors and constellations of factors that create enriching environments in which children thrive. The EfC framework is based on the social ecological model of child development in which children experience the world and develop through interactions with individuals and environments. Each system or context in the social ecology provides increasingly distal influences on individual development beginning with the characteristics of the child and expanding outward to characteristics of family and other relationships, community, society, and culture. Positive relationships and interactions in and across these various contexts lead to a greater likelihood for optimal health and development (e.g., Belsky, 1984; Bronfenbrenner, 1977; Cicchetti, Toth, & Maughan, 2000; Hurd & Sellers, 2013; Krug, Mercy, Dahlberg, & Zwi, 2002; NRC & IOM, 2009).

The core components of the EfC framework are defined as follows: *safety* is the extent to which a child is secure from physical or psychological harm within their social and physical environments; *stability* is conceptualized as healthy relationships and environments that are predictable and consistent; and *nurturing* is defined as the extent to which a caregiver (e.g., parent or other individual with primary responsibility for the child) or environment is able to

sensitively respond to and meet the emotional, physical, cognitive, and social needs of the child (CDC, 2013a; Mercy & Saul, 2009). Safety, stability and nurturing each exist along a continuum, thus it is essential to examine child development from both risk and protection frameworks and focus on multiple factors that have known widespread effects on these outcomes (e.g., parenting, school quality, neighborhood conditions, and poverty; Durlak, 1998).

The EfC conceptual framework, which was initially conceptualized as an approach to preventing child maltreatment, posits that the development and cultivation of safe, stable, and nurturing relationships in the life of a child are vital to promoting optimal child development and protecting children from violence and harm (CDC, 2013a). Further, they can have holistic health benefits across the child's life, help eliminate health disparities, and have a meaningful impact on health outcomes (CDC, 2013b). Within the framework, child wellness is viewed as a shared responsibility among all community members. Thus, the EfC framework is unique in its multidimensional, interpersonal approach to prevention and its focus on enhancing and promoting protective factors that may buffer or ameliorate risk rather than focusing on risk reduction strategies alone (CDC, 2013a; Mercy & Saul, 2009).

To date, the study of safe, stable, nurturing relationships has focused almost exclusively on the home environment and the early parent-child relationship because of its salience to child maltreatment prevention (Conger et al., 2013; Schofield, Lee, & Merrick, 2013; Turner et al., 2012). The parent-child relationship is the central context for the child during the earliest developmental stages. Further, the epidemiology of child maltreatment indicates that the youngest children are at the greatest risk for abuse and neglect (DHHS, 2015). Research at this level of the social ecology consistently shows that a combination of safe, stable, nurturing relationships and environments have a positive effect on parent-child relationships and help to reduce child maltreatment. Children who experience nurturing parent-child interactions (Slack, Holl, McDaniel, Yoo, & Bolger, 2004), grow up in home environments that are safe from physical danger (Dixon et al., 2009; Portwood, 2008; Scannapieco & Connell-Carrick, 2002) and have caregivers who experience stable, supportive, nurturing relationships with romantic partners (Conger et al., 2013; Dixon et al., 2009) are less likely to experience maltreatment. Additionally, children with nurturing and consistent caregivers are also more likely to be socially competent (Kerr, Capaldi, Pears, & Owen, 2009; Kochanska, Aksan, Knaack, & Rhines, 2004; Reynolds & Ou, 2011), physically healthy (Bell & Belsky, 2008; Rhee, Lumeng, Appugliese, Kaciroti, & Bradley, 2006), and successful in school (Basch, 2011; Jeynes, 2007).

However as children age, the salience of other social ecologies, particularly school and peers, increases as they spend a substantial portion of their time outside of the home in an educational context. Within this ecology children are exposed to both vertical (teacher-student and administrator-student) and horizontal (peer-to-peer) social relationships in a variety of settings such as the classroom and extracurricular activities (Elipe, Del Rey, & Ortega-Ruiz, 2015). These environments are unique ecologies that not only contribute to physical and cognitive health, but also impact psychosocial characteristics such as social-emotional competencies, behavior, and identity development (Alliance for Excellent Education, 2006; NRC & IOM, 2009; Hahn & Truman, 2015)

Moreover, poor developmental outcomes have been associated with indicators suggesting a lack of safety, stability, or nurturance in the educational environment. School violence represents the extreme end of the safety continuum in the school ecology and there is ample evidence for its detrimental effects on developmental outcomes. School violence has been shown to be associated with other delinquent activities such as gang membership (Estrada, Gilreath, Astor & Benbenishty, 2013) and bullying (Bradshaw, Waasdorp, Debnam, & Johnson, 2014). Violence and aggressive behavior among school-aged youth have also been shown to negatively impact cognition, school connectedness, and school attendance, which have cumulative effects on academic achievement (Basch, 2011) and interpersonal relationships (Elipe, Del Rey, Ortega-Ruiz, 2015). Student academic performance and school engagement is associated with environments that lack stability in terms of student mobility (e.g., Gruman et al., 2008; Mehana & Reynolds, 2004; Parke & Kanyongo, 2012). Furthermore, truancy, absenteeism, and school suspension, are all associated with poorer developmental outcomes including lower high school graduation rates, higher rates of reported depression and other mental disorders, and increased delinquency (Gottfried, 2014; Havik et al., 2015; Johnson et al., 2015; Kearney & Ross, 2014). In contrast, nurturing relationships such as teacher support and availability of mentoring relationships have been associated with school success (Estell & Perdue, 2013; Garcia-Reid, Peterson & Reid, 2015; Hurd & Sellers, 2013).

Safety, stability, and nurturance as individual factors have been shown to be critical to the school ecology and students' academic success. For example, the U.S. Department of Education's Safe and Supportive Schools model promotes emotional and physical safety (including bullying prevention, drug-free environments, and emergency preparedness) as key components of healthy schools (National Center on Safe Supportive Learning Environments, 2015). Research suggests that increased school connectedness, school safety, and school support are associated with decreased risks of school victimization and school violence perpetration (Estrada, Gilreath, Astor & Benbenishty, 2013), as well as increased academic performance (Estell & Perdue, 2013; Garcia-Reid, Peterson & Reid, 2015; Murray, 2009), improved well-being (Shochet & Smith, 2014), and more seamless transitions to adulthood (Monahan et al., 2010). Substantial research suggests the likelihood of student victimization decreases when middle school students feel safe, connected and supported by an adult or adults within their school (Benbenishty & Astor, 2005; Cornell & Mayer, 2010; Estrada, Gilreath, Astor & Benbenishty, 2013; Jimerson & Furlong, 2006; Mayer & Furlong, 2010; Swearer et al., 2010). Further, positive mentoring relationships in the classroom may be supportive of positive school attitudes (Zimmerman et al., 2005) as well as youth school engagement and academic performance, particularly for youth from low-income and minority backgrounds (Estell & Perdue, 2013; Garcia-Reid, Peterson & Reid, 2015; Hurd & Sellers, 2013; Murray, 2009). Other protective factors within school settings, such as social emotional curricula (Elipe, Del Rey, & Ortega-Ruiz, 2015), may also help to mediate negative developmental outcomes associated with bullying and other forms of violence within schools.

The evidence related to the importance of safety, stability, and nurturing as individual factors overwhelmingly indicates that they are essential to learning and developmental outcomes. However, less is known about the interacting roles of the broader domains of safe, stable,

nurturing relationships and environments in the school context (Estrada, Gilreath, Astor & Benbenishty, 2013). Applying the *Essentials for Childhood* framework within the school environment can provide a structure for examining the interactions across these core components and lead to a more complete understanding of the ways in which this important context and relationships in the school environment impact child development and health. This paper will describe the EfC conceptual framework; discuss operationalized definitions and survey measures of safe, stable, and nurturing relationships within the school ecology; and will end with a discussion of implications for researchers and education professionals of examining the school ecology using the EfC framework. The authors' goals are to suggest an approach to the application of the framework to the school ecology and to provide a resource for researchers and program implementers wishing to apply core components of this framework within their organizations.

## Method

In order to leverage the *Essentials for Childhood* framework for the promotion of safe, stable, nurturing relationships and environments within the school ecology we used the public health model described by Mercy et al. (1993) as a guide. The initial step of this model outlines two fundamental activities necessary for identifying safe, stable, nurturing relationships and environments in the school ecology. Defining and operationalizing key constructs and indicators of safe, stable, nurturing relationships and environments within educational settings is the first activity. Key indicators must be clearly operationalized prior to measurement to ensure that outcomes can be correctly attributed to indicators, suitable measurement methods and instruments are selected, and interventions can be targeted to appropriate groups (Glynn & Backer, 2010).

The second activity is identification of instruments that can reliably and validly measure these constructs and their key indicators. Once indicators are operationalized, researchers and education professionals can determine whether measures are available or will need to be developed in order to adequately capture critical information. Data can be gathered from various sources including administrative records (i.e., school or medical records) and survey data (e.g., reported by students, faculty, caregivers). Survey data can be collected from existing surveillance systems, if available, or new surveys can be developed that focus on a specific set of indicators and outcomes. When no focused survey is available but data on key indicators exist from other sources, items from existing surveys can be used in combination with reliability and validity testing for the new sample (Glynn & Backer, 2010).

Although data on some EfC indicators, such as stability of school attendance at both the school and individual child levels, can be collected from administrative data sources, many EfC indicators cannot. Public health-based surveys provide a tool for examining key health indicators such as bullying victimization and school connectedness that cannot be adequately captured through administrative databases. Surveys used for surveillance require systematic data collection from a representative sample of the population of interest for analysis and interpretation. Surveys also allow for the collection of a broad range of information from a large number of respondents in an efficacious and cost-effective manner (Wulczyn, 2009). Using survey data, researchers can gauge the magnitude of challenges and

successes in the school ecology; identify subgroups of students who may be at high risk for poor developmental outcomes who could benefit from focused intervention or increased services; track trends in the incidence and prevalence of key health indicators; and monitor the effectiveness of prevention and intervention activities such as the implementation of social-emotional curricula and peer counseling.

In order to generate operational definitions, identify indicators, and provide options for measurement of safety, stability, and nurturing in the school ecology that researchers and educational professionals can use when examining the presence and interaction of these constructs in the school setting, we conducted an environmental scan of the literature and available measures. Although we were systematic in our efforts we did not intend for this to be a systematic review and synthesis of the full literature on this topic.

Using the search term “school” in combination with: safety, safe, violence, harm, stability, stable, consistency, consistent, nurturance, nurture, sensitivity, sensitive, and responsive we searched PubMed, PsycINFO, ERIC, and MEDLINE. Results were limited to articles in English reporting on “school age” and “adolescent” populations, or children and youth in kindergarten through grade 12. Articles including samples of children younger than kindergarten (i.e., children in daycare or pre-school) and non-US samples were excluded due to potential for qualitative differences between early childhood educational context and formal primary and secondary schools and between the US and non-US schools. Once articles had been identified reference sections were reviewed to capture additional relevant articles from which indicators could be culled. We then conducted a second review of the literature (PubMed, PsycINFO, ERIC, and MEDLINE) focusing on survey instruments, or instruments that could be adapted for survey use, that assess safety, stability and nurturing within the school ecology.

## Results

Table 1 displays the dimensions and indicators of safety, stability and nurturance identified through our two literature reviews. In Tables 2 through 4 we present a sample of available measures of safety, stability, and nurturing, respectively. For each measure we present information on the intended age range, domains assessed, and indicators included. Psychometric information on the sample instruments and associated scales is included if this information was available in either the published literature or by contacting the study authors. The variability in the reliability and validity of the available measures is noteworthy (range of alpha was .59–.95); although the majority of scales reporting data were in the acceptable to good range. Tables 2 through 4 provide only a sample of available measures. Inclusion preference was given to instruments that captured more than one of the core domains identified or included key indicators that were not represented in other surveys. If there were multiple measures that represented more than one core domain, preference was given to measures with stronger psychometric properties.

## Safety

Safety is the extent to which a child is secure from physical or psychological harm within their social and physical environments (CDC, 2013a; Mercy & Saul, 2009). Based on our



literature review, safe schools (i.e., schools free from violence and delinquency) can be operationalized as schools that have strong school leadership and policies; foster student, family, and community involvement; promote open communication and equal treatment of students; and coordinate prevention and intervention services that students need to maintain physical, mental and social health (Dwyer, Osher, & Warger, 1998; Furlong, Paige, & Osher, 2003; Langdon & Preble, 2008; Cross, Mohajeri-Nelson, Newman-Gonchar, 2007; Perumean-Chaney, S. E. and L. M. Sutton, 2013; Robers, Kemp. Truman, & Snyder, 2012). Three dimensions of safety emerged from our review: respectful school climate, personal safety, and physical safety.

**Respectful School Climate**—Respectful school climate refers to the shared attitudes and values among students, teachers, and administrators that shape interactions between and among these groups and define appropriate behavior and school norms (Bradshaw, Waasdorp, Debnam, and Johnson, 2014; Zullig & Matthews-Ewald, 2014). These social and educational interactions are influenced by the quality of open, honest, and reciprocal (i.e., respectful) communication between the groups, particularly between parents and students, teachers and students, and teachers and administration. Surveys that address respectful and open communication use indicators such as whether students feel protected in expressing their opinions (Chicago Public Schools, 2007; National Center for Education Statistics, 2009), whether the school policies support an environment of open communication, whether minority groups feel safe in expressing their viewpoints, and the level of information exchange between school members. Respectful school climate is also indicated by regard for the school environment, which includes whether the school property is defaced or destroyed through vandalism, and efforts around maintenance and establishment of a clean school environment (Bradshaw, Waasdorp, Debnam, & Johnson, 2014; Planty & DeVoe, 2005). Other indicators of respectful school climate include bystander behavior (e.g., student responsiveness to unsafe behaviors such as bullying; Low & Ryzin, 2014) and respect for diversity (Bradshaw, Waasdorp, Debnam, & Johnson, 2014).

**Personal Safety**—Personal safety refers to the relationships and environments in the school ecology that protect individuals from interpersonal harm and indicators that promote interpersonal safety and emotional health (National Center on Safe and Supportive Learning Environments, 2015). Indicators of personal safety within the school environment include the teacher-to-student ratio, class size criteria, staff training around emergency preparedness, and overall promotion of the mental and physical safety of students and staff. Indicators of personal safety also include supervision and discipline of students, presence of violence (e.g., prevalence of fighting), and delinquency in the school (e.g., illicit activities on school grounds, gang activities or wearing of gang colors), bullying and peer victimization and perpetration, and school policies related to the personal safety of students and staff (e.g., policies on a safe and drug-free school). Aspects of personal safety also include psychological safety such as protection from sexual harassment, procedures for peer mediation and conflict resolution, and efforts by the school to provide an emotionally supportive environment or “safe space” for marginalized groups such as sexual and racial/ethnic minorities.

**Physical Safety**—The third dimension of safety is described as an environment that ensures freedom from physical harm. Whereas personal safety is associated with interpersonal harm, physical safety is related to environmental threats and violence within the physical environment of the school and neighborhood. Indicators of physical safety include access to safe passage to and from the school grounds (e.g., whether transportation is safe and available to all children and staff who need it, safety of walking routes); presence of security measures, including security guards, metal detectors and door locks; policies regarding the release of children to caregivers; existence of evacuation plans and emergency preparedness policies; environmental safety such as air quality and toxins in the school environment; equipment and playground safety; and the availability of school nurses to meet students' physical health needs. Relationships that link the school, community, and police also help to ensure physical safety.

**School Research Using Indicators of Safety**—Table 2 presents a selection of specific measures that have been used to capture and assess safety in the school ecology. Research using these and other measures report positive health and developmental outcomes related to personal and physical safety in schools such as reductions in risk behaviors (e.g. alcohol and drug use, suicide and self-harm behaviors, antisocial behaviors, and low engagement in school activities/homework) and increases in protective factors including more positive perceptions of parent-teacher relationships and increased student involvement in school activities (Benbenishty & Astor, 2005; Cornell & Mayer, 2010; Cross et al., 2007; Estrada, Gilreath, Astor & Benbenishty, 2013; Jimerson & Furlong, 2006; Mayer & Furlong, 2010; Swearer et al., 2010). Additionally, comprehensive reviews of universal school-based violence prevention programs have demonstrated reductions in externalizing and acting-out behaviors by students, delinquency, and suspensions or disciplinary referrals (Hahn et al., 2007), and show promise for preventing mental, emotional, and behavioral disorders (NRC & IOM, 2009).

## Stability

Stability is operationalized as healthy environments that are predictable, positive, and consistent (CDC, 2013a; Mercy & Saul, 2009). Indicators of stability fall into three dimensions: curriculum and policy stability; stability of school attendance; and staffing stability. Tables 1 and 3 display the dimensions and indicators of stability found in the literature and describe the surveys and metrics used to measure them, respectively.

**Curriculum and Policy Stability**—Curriculum stability indicates a school that is invested in providing a consistent environment. Indicators of curriculum stability include the order, organization, and consistency of the curricula. Changes to curricula at these schools are generally addressed cautiously with insight into the impact that transitions may have on students and staff. Indicators of policy stability include the fair and consistent enforcement of rules and policies.

**Stability of School Attendance**—Indicators of stability of school attendance include number of days the student was absent, number of schools the student attended during the school-calendar year, number of schools ever attended, as well as the residential stability of



the families in the school district. Stability of school attendance is also indicated by policy alternatives to suspension. The most straightforward indicators of stability of school attendance are individual- and school level student attendance rates (National Forum on Education Statistics, 2009). The National Forum on Education Statistics (2009) has published guidelines on how best to collect and define school attendance for data analysis purposes.

**Staffing Stability**—Staffing stability reflects the consistency of the school- level caregiving relationships. It can be operationalized at the individual-level as teacher attendance or at the school-level as staff turnover rates.

**School Research Using Indicators of Stability**—Stability in the school environment has been shown to directly and indirectly decrease risk factors for poor developmental outcomes such as truancy, suspension and expulsion, low achievement scores, delinquency and youth violence, disorganized social networks, and victimization (Havik et al., 2015; Gruman et al., 2008; Kearney & Ross, 2014; Mehana & Reynolds, 2004; Parke & Kanyongo, 2012). Stable school environments have also been shown to increase indicators of healthy development (e.g., school connectedness, high school graduation rates, social competence, and mental, emotional and behavioral health; Guin, 2004; Jelleyman & Spencer, 2008). For example, children and adolescents who consistently attend school and experience a stable learning environment are more likely to have families who are engaged in the education process and are more likely to graduate from high school (Chang & Romero, 2008; McCluskey, Bynum, & Patchin, 2004). High teacher turnover has been associated with lower student math and achievement scores on state tests and negative perceptions of school climate (Guin, 2004), highlighting the importance of the effect of teacher consistency on student academic success and students' perspective of the school environment. In addition, school disorganization, an indicator of school policy instability, is among the key risk factors for youth violence perpetration (DeGue et al., 2013).

## Nurturing

Nurturing, or nurturance, refers to the quality of interpersonal relationships and how responsive the learning environment is to the individual needs of the student (CDC, 2013a; Mercy & Saul, 2009). Indicators of nurturance are found in the interpersonal relationships that occur between teachers and students, as well as peer-to-peer relationships. Positive learning environments that include a developmentally appropriate curriculum are also indicative of nurturing school ecologies. Nurturance can also be operationalized as the principle intended product of school, education itself. That is, nurturing school ecologies produce an educated student population. Two dimensions of nurturing in the school ecology emerged from our literature review: supportive relationships and positive learning environment. Table 1 displays the dimensions and indicators of nurturance found in the literature. The surveys and metrics of nurturance are described in Table 4.

**Supportive Relationships**—The literature supports a variety of indicators of school-based supportive relationships: 1) quality of the teacher-student relationship (e.g., warmth, sensitivity, and conflict); 2) availability of parenting support programs in the school; 3)

mentorship programs and opportunities for students and staff; 4) positive peer relationships; 5) parental involvement in the school and school work; 6) teacher's positive expectations for student achievement; 7) access to psychological services, such as availability of school counselors/psychologists, number of school counselors/psychologists per student, and availability of counselors/psychologists for teachers and staff; and 8) school connectedness (CDC, 2009) or, "the belief by students that adults in the school care about their learning as well as about them as individuals" (p.3).

**Positive Learning Environment**—Indicators of a positive learning environment include a developmentally appropriate, child-centered curriculum that reflects cultural/ethnic diversity, availability of a social-emotional curriculum (Elipe, Del Rey, & Ortega-Ruiz, 2015), and availability of extracurricular activities for students. A positive learning environment also includes indicators of the sense of community within the school and positive teacher and student beliefs, attitudes, and feelings toward being at school every day (Anderson, 1982; Battistich & Hom, 1997; Bradshaw, Waasdorp, Debnam, & Johnson, 2014).

**School Research Using Indicators of Nurturing**—Teachers and other adults within the school and other proximal settings have the opportunity to cultivate education skills in children and youth through nurturing, mentoring interpersonal relationships rather than through formal instruction. The school research literature suggests that supportive school-based interpersonal relationships and positive learning environments are key dimensions of nurturance within educational settings (Hurd & Sellers, 2013; Low & Ryzin, 2014; Bradshaw, Waasdorp, Debnam, & Johnson, 2014). These factors affect students' health and well-being within schools and across the life course, and may potentially have direct implications on racial/ethnic disparities in education and health (Hahn & Truman, 2015). Positive, nurturing relationships with teachers and connectedness to the school are associated with higher academic achievement (Barber & Olsen, 1997; Basch, 2011; Estrada, Gilreath, Astor & Benbenishty, 2013; Hurd & Sellers, 2013; Klem & Connell, 2004) and academic motivation (Basch, 2011; Battistich, Solomon, Kim, Watson, & Schaps, 1995; Furrer & Skinner, 2003; Hurd & Sellers, 2013; Martin & Dowson, 2009); less aggression and delinquency (Resnick et al., 1998; Wilson, 2004); and fewer health risk behaviors such as alcohol and cigarette use, suicide attempts, and early initiation of sexual behavior (Estrada, Gilreath, Astor & Benbenishty, 2013; Hurd & Sellers, 2013; McNeely & Falci, 2004; Resnick et al., 1998). Positive learning environment indicators, including social-emotional curriculum and developmentally appropriate practices, are associated with both social-emotional competencies and academic competencies such as improved mental health (Bradshaw, Waasdorp, & Leaf, 2012; Domitrovich & Greenberg, 2000; Jennings & Greenberg, 2009) and reading and math skills (Huffman & Speer, 2000).

## Discussion

Examining safe, stable, nurturing relationships in the school context in ways that build on the work presented in this article could provide valuable and actionable knowledge. This may include validating the relationships between these variables to collectively examine how they operate within the school context and impact the achievement gap, health equity, and

other outcomes across the life course. Educators can use this information to create school ecologies that promote optimal lifelong health and development of all children. Use of the *Essentials for Childhood* framework in combination with available instruments such as those presented in this paper can help clarify critical points for intervention and prevention.

The core components of the *Essentials for Childhood* framework and their respective dimensions (e.g., personal safety, policy stability, and supportive relationships) are distinct, but show significant overlap conceptually and in measurement approaches. Future work to further delineate these conceptual areas may benefit from taking a statistical approach to differential categorization, for example, using statistical factor analyses. For clarity, we have described measures separately but suggest that the various dimensions of the framework be examined in combination as the interaction between dimensions may have mediating or moderating effects on outcomes such as individual long-term health and well-being as well as community prosperity and economic equity.

Although several of the measures included in this paper assess multiple dimensions (e.g., Communities that Care Survey, School Health Policy Surveillance System, Youth Assets Survey), the authors were unable to find a single survey measuring all indicators across all dimensions. In addition, the availability of psychometric data on the instruments was very limited. For example, only 52% (15 out of 29) of the survey scales and items presented in this review had available psychometric data. This suggests caution should be considered when selecting measures without psychometric data; and indicates a need for well researched survey measurement approaches for these concepts.

There are both advantages and challenges to creating a single survey concurrently assessing safety, stability, and nurturing in the school ecology. A single measure would allow researchers to investigate the interactions between domains and dimensions, examine individual differences in the dimensions, and track trends over time. However, the logistics of developing and implementing such a broad survey present a significant challenge. The possibility exists that in creating a single measure with acceptable psychometric properties that addresses all domains and indicators of safety, stability and nurturing in the school ecology, the resulting instrument would be unwieldy to deliver. Additionally, identifying the appropriate population (e.g., students, educational staff, caregivers, educational administration) for a broad instrument could be problematic.

Further work to identify the most critical indicators of this framework within the school setting and how other contexts impact these indicators can help streamline instruments designed to assess multiple aspects of the EfC framework. Additionally, as the social-ecological model posits, the school context is nested within other critical social ecologies. Examining the interaction between the school ecology and other social ecologies is warranted to understand ways in which the school ecology is impacted by indicators of the larger cultural/social context such as poverty (Evans, Gonnella, Marcynyszyn, Gentile, & Salpekar, 2005; Perkins, 2012) and neighborhood conditions (Attar, Guerra, & Tolan, 1994; Kirk, 2009; Thompson, Iachan, Overpeck, Ross, & Gross, 2006).

In addition to the EfC framework, CDC also emphasizes the role of schools in cultivating safe and supportive environments through coordinated school health (CSH)— a systematic approach for embedding health-promotion activities in school settings (CDC, 2014). The core components of the EfC framework align with CSH and can have synergistic effects on a broad range of student physical and mental health outcomes (CDC, 2013; Mercy & Saul, 2009). Although there is a complementary relationship between CSH and EfC, extensive discussion of CSH or its components is beyond the scope of this paper. Further research on the application of the *Essentials for Childhood* conceptual framework should also examine the many ways in which CSH programs can be leveraged and are already being used to foster safe, stable, nurturing relationships and environments.

It is encouraging that over the past decade, the number of national surveys that measure elements of children's health and development has increased (for good examples, see the National Survey of Children's Health [<http://www.childhealthdata.org/learn/NSCH>], National Survey of Early Childhood Health [<http://www.cdc.gov/nchs/slaitis/nsech.htm>], Early Childhood Longitudinal Study [<http://nces.ed.gov/ecls/>]). However, these surveys are not designed to provide comprehensive measures of children's health and development, and often include inadequate measures of the protective end of the safety, stability, and nurturing continua (Institute of Medicine, 2004). Education professionals may wish to consider partnerships that allow for the option of adding items to existing surveys – an often efficient and cost-effective approach to systematic data collection of protective factors at the school-level of the social ecology.

The work presented in this paper is intended to be an overview for education professionals and researchers who may be interested in exploring the relationships between safety, stability, and nurturance in educational settings. Although there has been research on many aspects of safety, stability, and nurturing in the school ecology, the net effect of and interactions amongst the components of safe and healthy schools have not been thoroughly explored. The *Essentials for Childhood* framework provides a unique structure that emphasizes both the individual core components of safety, stability and nurturing, as well as the need to examine the relations amongst these components in order to fully understand the school ecology and promote optimal child development within this context.

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## References

- Alliance for Excellent Education. Healthier and Wealthier: Decreasing Health Care Costs by Increasing Educational Attainment. Washington, DC: 2006 Nov. Issue Brief November 2006
- American Association of University Women. Hostile Hallways: The AAUW Survey on Sexual Harassment in America's Schools. Washington, DC: American Association of University Women; 1993.
- Anderson CS. The search for school climate: A review of the research. Review of Educational Research. 1982; 52(3):368–420.

- Arthur MW, Hawkins JD, Pollard JA, Catalano RF, Baglioni AJ Jr. Measuring risk and protective factors for substance use, delinquency, and other adolescent problem behaviors: The Communities That Care Youth Survey. *Evaluation Review*. 2002; 26(6):575–601. [PubMed: 12465571]
- Attar BK, Guerra NG, Tolan PH. Neighborhood disadvantage, stressful life events and adjustments in urban elementary-school children. *Journal of Clinical Child Psychology*. 1994; 23(4):391–400.
- Attorney General's National Task Force on Children Exposed to Violence. *Defending Childhood, Protect, Heal, Thrive: Report of the Attorney General's National Task Force on Children Exposed to Violence*. 2012. Available from: <http://www.justice.gov/defendingchildhood/cev-rpt-full.pdf>
- Azeredo CM, Rinaldi AEM, de Moraes CL, Levy RB, Menezes PR. School bullying: A systematic review of contextual-level risk factors in observational studies. *Aggression and Violent Behavior*. 2015; 22:65–76.
- Balaji, AB.; Brener, ND.; McManus, T.; Hawkins, J.; Kann, L.; Speicher, N. *School Health Profiles: Characteristics of Health Programs Among Secondary Schools 2006*. Atlanta: Centers for Disease Control and Prevention; 2008.
- Barber BK, Olsen JA. Socialization in context: Connection, regulation, and autonomy in the family, school, and neighborhood, and with peers. *Journal of Adolescent Research*. 1997; 12(2):287–315.
- Basch CE. Aggression and violence and the achievement gap among urban minority youth. *Journal of school health*. 2011; 81(10):619–625. [PubMed: 21923874]
- Battistich V, Hom A. The relationship between students' sense of their school as a community and their involvement in problem behaviors. *American Journal of Public Health*. 1997; 87(12):1997–2001. [PubMed: 9431290]
- Battistich V, Solomon D, Kim D, Watson M, Schaps E. Schools as Communities, Poverty Levels of Student Populations, and Students' Attitudes, Motives, and Performance: A Multilevel Analysis. *American Educational Research Journal*. 1995; 32(3):627–658.
- Bell BG, Belsky J. Parenting and children's cardiovascular functioning. *Child: Care, Health and Development*. 2008; 34(2):194–203.
- Belsky J. The determinants of parenting: A process model. *Child development*. 1984:83–96. [PubMed: 6705636]
- Benbenishty, R.; Astor, RA. *School violence in context: Culture, neighborhood, family, school, and gender*. Oxford University Press; 2005.
- Bradshaw CP, Waasdorp TE, Debnam KJ, Johnson SL. Measuring school climate in high schools: A focus on safety, engagement, and the environment. *Journal of School Health*. 2014; 84(9):593–604. [PubMed: 25117894]
- Bradshaw CP, Waasdorp TE, Leaf PJ. Effects of School-Wide Positive Behavioral Interventions and Supports on Child Behavior Problems. *Pediatrics*. 2012; 130(5):e1136–e1145. [PubMed: 23071207]
- Brener ND, Kann L, McManus TL, Kinchen S, Sundberg EC, Ross JG. Reliability of the 1999 Youth Risk Behavior Survey Questionnaire. *Journal of Adolescent Health*. 2002; 31:336–342. [PubMed: 12359379]
- Brener ND, Kann L, Smith TK. Reliability and validity of the School Health Policies and Programs Study 2000 Questionnaires. *Journal of School Health*. 2003; 73:29–37. [PubMed: 12621721]
- Bronfenbrenner U. Toward an experimental ecology of human development. *American Psychologist*. 1977; 32(7):513–531.
- CA Department of Education. *California School Climate Survey*. Sacramento, CA: WestEd; 2009.
- Carey, N.; Lewis, L.; Faris, E.; Burns, S. *Parent involvement in children's education: Efforts by public elementary schools*. U.S Department of Education: National Center for Education Statistics; 1998.
- Centers for Disease Control and Prevention. *School Connectedness: Strategies for increasing protective factors among youth*. Atlanta, GA: U.S. Department of Health and Human Services; 2009.
- Centers for Disease Control and Prevention. *Essentials for Childhood: Steps to create safe, stable, and nurturing Relationship*. 2013a. Retrieved from [http://www.cdc.gov/violenceprevention/pdf/essentials\\_for\\_childhood\\_framework.pdf](http://www.cdc.gov/violenceprevention/pdf/essentials_for_childhood_framework.pdf)

- Centers for Disease Control and Prevention. Building Commitment for Safe, Stable, Nurturing Relationships and Environments. 2013b. Retrieved from <http://www.cdc.gov/violenceprevention/pdf/efc-building-community-commitment.pdf.pdf>
- Centers for Disease Control and Prevention. Expanding the Coordinated School Health Approach. 2014. Retrieved from <http://www.cdc.gov/healthyyouth/wsc/approach.htm>
- Chang, HN.; Romero, M. Present, Engaged and Accounted For: The Critical Importance of Addressing Chronic Absence in the Early Grades. New York: Columbia University; 2008.
- Chicago Public Schools. Chicago Student Connectedness Survey. Chicago, IL: American Institute for Research & Chicago Public Schools; 2007.
- Cicchetti, D.; Toth, SL.; Maughan, A. Handbook of developmental psychopathology. Springer; 2000. An ecological-transactional model of child maltreatment; p. 689-722.
- Conduct Problems Prevention Research Group. A developmental and clinical model for the prevention of conduct disorder: The FAST Track Program. Development and Psychopathology. 1992; 4(4): 509–527.
- Conduct Problems Prevention Research Group. Parent and Teacher Involvement Measure – Parent & Teacher versions. 1991. Retrieved from <http://www.fasttrackproject.org/>
- Conger R, Schofield TJ, Neppl TK, Merrick MT. Disrupting intergenerational continuity in harsh and abusive parenting: The importance of a nurturing relationship with a romantic partner. Supplement to Journal of Adolescent Health. 2013; 53(4S)
- Cornell DG, Mayer MJ. Why do school order and safety matter? Educational Researcher. 2010; 39(1): 7–15.
- Cross JE, Mohajeri-Nelson N, Newman-Gonchar R. Project LINK: Improving risk and protective factors through comprehensive services. Journal of School Violence. 2007; 6(2):23–55.
- DeGue S, Massetti GM, Holt MK, Tharp AT, Valle LA, Matjasko JL, Lippy C. Identifying links between sexual violence and youth violence perpetration: New opportunities for sexual violence prevention. Psychology of Violence. 2013; 3:140–156.
- Dixon L, Browne K, Hamilton-Giachritsis C. Patterns of risk and protective factors in the intergenerational cycle of maltreatment. Journal of Family Violence. 2009; 24(2):111–122.
- Domitrovich CE, Greenberg MT. The study of implementation: Current findings from effective programs that prevent mental disorders in school-aged children. Journal of Educational and Psychological Consultation. 2000; 11(2):193–221.
- Durlak JA. Common risk and protective factors in successful prevention programs. American Journal of Orthopsychiatry. 1998; 68(4):512–520. [PubMed: 9809111]
- Dwyer, K.; Osher, D.; Warger, C. Safeguarding Our Children An Action Guide:Implementing Early Warning, Timely Response. 1998. Available from [http://www.ed.gov/admins/lead/safety/actguide/action\\_guide.txt](http://www.ed.gov/admins/lead/safety/actguide/action_guide.txt)
- Elipe, P.; Del Rey, R.; Rosario, O. Emotional intelligence in the classroom: An important factor in school violence. In: Zysberg, L.; Raz, S., editors. Emotional Intelligence: Current Evidence from psychophysiological, educational, and organizational perspectives. New York: Nova Science; 2015. p. 105-118.
- Elliott DS, Huizinga D, Morse B. Self-reported violent offending: A descriptive analysis of juvenile violent offenders and their offending careers. Journal of Interpersonal Violence. 1986; 1(4):472–514.
- Estell DB, Perdue NH. Social support and behavioral and affective school engagement: The effects of peers, parents, and teachers. Psychology in the Schools. 2013; 50(4):325–339.
- Estrada JN, Gilreath TD, Astor RA, Benbenishty R. Gang membership of California middle school students: behaviors and attitudes as mediators of school violence. Health Education Research. 2013; 28(4):626–639. [PubMed: 23525778]
- Ettinger AS. Children's Health, The Nation's Wealth: Assessing and Improving Child Health. Environmental Health Perspectives. 2004; 112(14):A844.
- Evans GW, Gonnella C, Marcynyszyn LA, Gentile L, Salpekar N. The role of chaos in poverty and children's socioemotional adjustment. Psychological Science. 2005; 16(7):560–565. [PubMed: 16008790]



- Federal Interagency Forum on Child & Family Statistics. America's Children: Key National Indicators of Well-Being. 2012.
- Finkelhor D, Turner H, Ormrod R, Hamby SL. Violence, abuse, and crime exposure in a national sample of children and youth. *Pediatrics*. 2009; 124(5):1411–1423. [PubMed: 19805459]
- Frey KS, Hirschstein MK, Snell JL, Edstrom LVS, MacKenzie EP, Broderick CJ. Reducing Playground Bullying and Supporting Beliefs: An Experimental Trial of the Steps to Respect Program. *Developmental Psychology*. 2005; 41(3):479–491. [PubMed: 15910156]
- Furlong M, Paige LZ, Osher D. The Safe Schools/Healthy Students (SS/HS) initiative: Lessons learned from implementing comprehensive youth development programs. *Psychology in the Schools*. 2003; 40(5):447–456.
- Furrer C, Skinner E. Sense of relatedness as a factor in children's academic engagement and performance. *Journal of Educational Psychology*. 2003; 95(1):148.
- Garcia-Reid P, Peterson CH, Reid RJ. Parent and teacher support among Latino immigrant youth: Effects on school engagement and school trouble avoidance. *Education and Urban Society*. 2015; 47(3):328–343.
- Glynn, MK.; Backer, LC. Collecting public health surveillance data. In: Lee, LM.; Teutsch, SM.; Thacker, SB.; St. Louis, ME., editors. *Principles & practice of Public Health Surveillance*. Vol. 3. Oxford: Oxford University Press; 2010. p. 44-64.
- Gottfried MA. The achievement effects of tardy classmates: Evidence in urban elementary schools. *School Effectiveness and School Improvement*. 2014; 25(1):3–28.
- Gruman DH, Harachi TW, Abbott RD, Catalano RF, Fleming CB. Longitudinal effects of student mobility on three dimensions of elementary school engagement. *Child Development*. 2008; 79(6):1833–1852. [PubMed: 19037953]
- Guin K. Chronic Teacher Turnover in Urban Elementary Schools. *Education Policy Analysis Archives*. 2004; 12(42):42.
- Hahn R, Fuqua-Whitley D, Wethington H, Lowy J, Crosby A, Fullilove M, Dahlberg L. Effectiveness of Universal School-Based Programs to Prevent Violent and Aggressive Behavior: A Systematic Review. *American Journal of Preventive Medicine*. 2007; 33(2, Supplement):S114–S129. doi: <http://dx.doi.org/10.1016/j.amepre.2007.04.012>. [PubMed: 17675013]
- Hahn R, Truman B. Education Improves Public Health and Promotes Health Equity. *International Journal of Health Services*. 2015; 0(0)
- Havik T, Bru E, Ertesvag SK. School factors associated with school refusal- and truancy-related reasons for school non-attendance. *Social Psychology of Education*. 2015; 18(2):221–240.
- Hill KG, Howell JC, Hawkins JD, Battin-Pearson SR. Childhood Risk Factors for Adolescent Gang Membership: Results from the Seattle Social Development Project. *Journal of Research in Crime and Delinquency*. 1999; 36(3):300–322.
- Hoover-Dempsey, KV.; Sandler, HM. Final performance report for OERI Grant # R305T010673: The social context of parental involvement: A path to enhanced achievement; Presented to Project Monitor, Institute of Education Sciences, U.S. Department of Education; March 22, 2005; 2005.
- Huffman LR, Speer PW. Academic performance among at-risk children: The role of developmentally appropriate practices. *Early Childhood Research Quarterly*. 2000; 15(2):167–184. doi: [http://dx.doi.org/10.1016/S0885-2006\(00\)00048-X](http://dx.doi.org/10.1016/S0885-2006(00)00048-X).
- Hunter WM, Cox CE, Teagle S, Johnson RM, Mathew R, Knight ED, Leeb RT. Measures for Assessment of Functioning and Outcomes in Longitudinal Research on Child Abuse. 2003; 1 Retrieved from <http://www.iprc.unc.edu/longscan/>.
- Hurd N, Sellers R. Black Adolescents' Relationships With Natural Mentors: Associations With Academic Engagement via Social and Emotional Development. *Cultural Diversity and Ethnic Minority Psychology*. 2013; 19(1):76–85.
- Jelleyman T, Spencer N. Residential mobility in childhood and health outcomes: A systematic review. *Journal of Epidemiology & Community Health*. 2008; 62(7):584–592. [PubMed: 18559440]
- Jennings PA, Greenberg MT. The prosocial classroom: Teacher social and emotional competence in relation to student and classroom outcomes. *Review of Educational Research*. 2009; 79(1):491–525.

- Jeynes WH. The Relationship Between Parental Involvement and Urban Secondary School Student Academic Achievement: A Meta-Analysis. *Urban Education*. 2007; 42(1):82–110.
- Jimerson, S.; Nickerson, A.; Mayer, M.; Furlong, M. *The Handbook of School Violence and School Safety*. 1. Routledge; 2006.
- Kearney, CA.; Ross, E. Problematic school absenteeism. In: Alfano, CA.; Beidel, DC., editors. *Comprehensive evidence based interventions for children and adolescents*. Hoboken: John Wiley & Sons Inc; 2014. p. 275-286.
- Kerr DC, Capaldi DM, Pears KC, Owen LD. A prospective three generational study of fathers' constructive parenting: Influences from family of origin, adolescent adjustment, and offspring temperament. *Developmental Psychology*. 2009; 45(5):1257. [PubMed: 19702390]
- Kirk DS. Unraveling the contextual effects on student suspension and juvenile arrest: The independent and interdependent influences of school, neighborhood, and family social controls. *Criminology*. 2009; 47(2):479–520.
- Klem AM, Connell JP. Relationships matter: Linking teacher support to student engagement and achievement. *Journal of School Health*. 2004; 74(7):262–273. [PubMed: 15493703]
- Kochanska G, Aksan N, Knaack A, Rhines HM. Maternal Parenting and Children's Conscience: Early Security as Moderator. *Child Development*. 2004; 75(4):1229–1242. [PubMed: 15260874]
- Krug EG, Mercy JA, Dahlberg LL, Zwi AB. The world report on violence and health. *The Lancet*. 2002; 360(9339):1083–1088.
- Kyle TM, Brener ND, Kann L, Ross JG, Roberts AM, Iachan R, McManus T. Methods: School Health Policies and Programs Study 2006. *Journal of School Health*. 2007; 77:398–407. [PubMed: 17908100]
- Low S, Van Ryzin M. The moderating effects of school climate on bullying prevention efforts. *School Psychology Quarterly*. 2014; 29(3):306–319.
- Martin AJ, Dowson M. Interpersonal Relationships, Motivation, Engagement, and Achievement: Yields for Theory, Current Issues, and Educational Practice. *Review of Educational Research*. 2009; 79(1):327–365.
- Massey-Stokes M, Lanning B. Commentary: School Health and Family and Community Involvement: Making a Difference in the Prevention of Child Abuse and Neglect. *Adolescent & Family Health*. 2003; 3(4):154.
- Mayer M, Furlong M. How Safe Are Our Schools? *Educational Researcher*. 2010; 39(1):16–26.
- McCluskey CP, Bynum TS, Patchin JW. Reducing Chronic Absenteeism: an Assessment of an Early Truancy Initiative. *Crime and Delinquency*. 2004; 50(2):214–234.
- McNeely C, Falci C. School Connectedness and the Transition Into and Out of Health-Risk Behavior Among Adolescents: A Comparison of Social Belonging and Teacher Support. *Journal of School Health*. 2004; 74(7):284–292. [PubMed: 15493705]
- Mehana M, Reynolds AJ. School mobility and achievement: a meta-analysis. *Children and Youth Services Review*. 2004; 26(1):93–119. doi: <http://dx.doi.org/10.1016/j.childyouth.2003.11.004>.
- Mercy JA, Saul J. Creating a healthier future through early interventions for children. *Journal American Medical Association*. 2009; 301(21):2262–2264.
- Monahan KC, Oesterle S, Hawkins DJ. Predictors and consequences of school connectedness: The case for prevention. *The Prevention Researcher*. 2010; 17(3):3–6.
- Morgan, R.; Kemp, J.; Rathbun, A.; Robers, S.; Synder, T. *Indicators of School Crime and Safety, 2013*. Bureau of Justice Statistics; 2014. Available from <http://www.bjs.gov/index.cfm?ty=pbdetail&iid=5008>
- Murray C. Parent and Teacher Relationships as Predictors of School Engagement and Functioning Among Low-Income Urban Youth. *The Journal of Early Adolescence*. 2009; 29(3):376–404.
- Muschert, GW.; Henry, S.; Bracey, NL.; Peguero, AA. *Responding to School Violence: Confronting the Columbine Effect*. Boulder, CO: Lynne Rienner Publishers; 2014.
- Myers SS, Pianta RC. Developmental commentary: Individual and contextual influences on student-teacher relationships and children's early problem behaviors. *Journal of Clinical Child and Adolescent Psychology*. 2008; 37(3):600–608. [PubMed: 18645750]

- Nadel H, Spellman M, Alvarez-Canino T, Lausell-Bryant L, Landsberg G. The cycle of violence and victimization: A study of the school-based intervention of a multidisciplinary youth violence-prevention program. *American Journal of Preventive Medicine*. 1996; 12(5, Suppl):109–119. [PubMed: 8909631]
- National Center for Education Statistics. *School Survey on Crime and Safety*. Washington, DC: US Department of Education; 2009.
- National Center for Education Statistics and Bureau of Justice Statistics. *National Crime Victimization Survey, School Crime Supplement Survey*. Washington, DC: US Department of Commerce; 2009.
- National Forum on Education Statistics. *Every School Day Counts: The Forum Guide to Collecting and Using Attendance Data (NFES 2009-804)*. U.S. Department of Education Washington, DC: National Center for Education Statistics; 2009.
- National Longitudinal Study on Adolescent Health. *National Longitudinal Study on Adolescent Health In-Home Interview Section 5: Academics and Education*. Chapel Hill, NC: Carolina Population Center University of North Carolina at Chapel Hill; 1998a.
- National Longitudinal Study on Adolescent Health. *National Longitudinal Study on Adolescent Health, In School survey, Wave I*. Chapel Hill, NC: Carolina Population Center University of North Carolina at Chapel Hill; 1998b.
- National Research Council and Institute of Medicine. *Preventing Mental, Emotional, and Behavioral Disorders Among Young People: Progress and Possibilities*. Washington DC: The National Academies Press; 2009.
- Oman RF, Vesely SK, Aspy CB. Youth Assets and Sexual Risk Behavior: The Importance Of Assets for Youth Residing in One-Parent Households. *Perspectives on Sexual and Reproductive Health*. 2005; 37(1):25–31. [PubMed: 15888400]
- Page, J.; Daniels, JA.; Craig, SJ. *Violence in Schools*. 1. Springer International Publishing; 2015.
- Parke CS, Kanyongo GY. Student attendance, mobility, and mathematics achievement in an urban school district. *The Journal of Educational Research*. 2012; 105(3):161–175.
- Perkins S. An ecological perspective on the comorbidity of childhood violence exposure and disabilities: Focus on the ecology of the school. *Psychology of Violence*. 2012; 2(1):75.
- Planty, M.; DeVoe, JF. *An Examination of the Conditions of School Facilities Attended by 10th-Grade Students in 2002*. Washington, DC: U.S. Government Printing Office; 2005. (NCES 2006-302)
- Portwood, SG. *Family influences on childhood behavior and development: Evidence-based prevention and treatment approaches*. New York, NY, US: Routledge/Taylor & Francis Group; 2008. Physical abuse in childhood (ages 5–13); p. 267-292.
- Resnick, MD.; Bearman, PS.; Blum, RW.; Bauman, KE.; Harris, KM.; Jones, J.; Udry, JR. *Adolescent Health Adolescent behavior and society: A book of readings*. 5th. New York, NY, US: McGraw-Hill; 1998. Protecting adolescents from harm: Findings from the National Longitudinal Study of; p. 376-395.
- Reynolds AJ, Ou SR. Paths of effects from preschool to adult well-being: A confirmatory analysis of the Child-Parent Center Program. *Child Development*. 2011; 82(2):555–582. [PubMed: 21410923]
- Rhee KE, Lumeng JC, Appugliese DP, Kaciroti N, Bradley RH. Parenting styles and overweight status in first grade. *Pediatrics*. 2006; 117(6):2047–2054. [PubMed: 16740847]
- Robers, S.; Kemp, J.; Truman, J.; Snyder, TD. *Indicators of School Crime and Safety*: 2011. Washington, DC: National Center for Education Statistics; 2012.
- Roberts, W.; Hom, A.; Battistich, V. Assessing students' and teachers' sense of school as a caring community; Paper presented at the Annual meeting of the American Educational Research Association; San Francisco. 1995 Apr.
- Scannapieco M, Connell-Carrick K. Focus on the first years: An eco-developmental assessment of child neglect for children 0 to 3 years of age. *Children and Youth Services Review*. 2002; 24(8): 601–621.
- Schofield TJ, Lee RD, Merrick MT. Safe, stable, nurturing relationships as a moderator of intergenerational continuity of child maltreatment: A meta-analysis. *Journal of Adolescent Health*. 2013; 53(4):S32–S38.

- Shochet IM, Smith CL. A Prospective Study Investigating the Links among Classroom Environment, School Connectedness, and Depressive Symptoms in Adolescents. *Psychology in the Schools*. 2014; 51(5):480–492.
- Shonkoff JP, Boyce WT, McEwen BS. Neuroscience, Molecular Biology, and the Childhood Roots of Health Disparities: Building a New Framework for Health Promotion and Disease Prevention. *Journal of the American Medical Association*. 2009; 301(21):2252–2259. [PubMed: 19491187]
- Slack KS, Holl JL, McDaniel M, Yoo J, Bolger K. Understanding the Risks of Child Neglect: An Exploration of Poverty and Parenting Characteristics. *Child Maltreatment*. 2004; 9(4):395–408. [PubMed: 15538038]
- Swearer SM, Espelage DL, Vaillancourt T, Hymel S. What can be done about school bullying? Linking research to educational practice. *Educational Researcher*. 2010; 39(1):38–47.
- Thompson DR, Iachan R, Overpeck M, Ross JG, Gross LA. School Connectedness in the Health Behavior in School-Aged Children Study: The Role of Student, School, and School Neighborhood Characteristics. *Journal of School Health*. 2006; 76(7):379–386. [PubMed: 16918872]
- Trickett EJ, Moos RH. Social environment of junior high and high school classrooms. *Journal of Educational Psychology*. 1973; 65(1):93–102.
- Turner HA, Finkelhor D, Ormrod R, Hamby S, Lee RT, Mercy JA, Holt M. Family context, victimization, and child trauma symptoms: variations in safe, stable, and nurturing relationships during early and middle childhood. *American Journal of Orthopsychiatry*. 2012; 82(2):209–219. [PubMed: 22506523]
- U.S. Department of Education. Average length of school year and average length of school day for private schools, by selected characteristics: United States, 2005–06. Washington, DC: National Center for Education Statistics; 2007.
- U.S. Department of Education. Average daily attendance (ADA) as a percentage of total enrollment, school day length, and school year length in public schools, by school level and state: 2003-04 and 2007-08. Washington, DC: National Center for Education Statistics; 2011.
- U.S. Department of Health and Human Services, Health Resources and Services Administration, & Maternal and Child Health Bureau. The National Survey of Children's Health 2007. Rockville, Maryland: U.S. Department of Health and Human Services; 2009.
- U.S. Department of Health and Human Services; Administration for Children and Families; Administration on Children Youth and Families; Children's Bureau. Child Maltreatment 2011. 2013. Retrieved from <http://www.acf.hhs.gov/programs/cb/research-data-technology/statistics-research/child-maltreatment>
- U.S. Department of Health and Human Services, Administration for Children and Families, Administration on Children, Youth and Families, Children's Bureau. Child maltreatment 2013. 2015. Retrieved from <http://www.acf.hhs.gov/programs/cb/research-data-technology/statistics-research/child-maltreatment>
- Walker JMT, Wilkins AS, Dallaire JP, Sandler HM, Hoover-Dempsey KV. Parental involvement: Model revision through scale development. *Elementary School Journal*. 2005; 106:85–104.
- Weissberg, RP.; Voyce, CK.; Kaspro, WJ.; Arthur, MW.; Shriver, TP. The Social and Health Assessment. Chicago, IL: Authors; 1991.
- Wilson D. The interface of school climate and school connectedness and relationships with aggression and victimization. *Journal of School Health*. 2004; 74:293–300. [PubMed: 15493706]
- Wong M, Shapiro M, Boscardin W, Ettner S. Contribution of major diseases to disparities in mortality. *New England Journal of Medicine*. 2002; 347:1585–1592. [PubMed: 12432046]
- Wulczyn F. Epidemiological perspectives on maltreatment prevention. *The Future of Children*. 2009; 19(2):39–66. [PubMed: 19719022]
- Zimmerman, MA.; Bingenheimer, JB.; Behrendt, DE. Natural mentoring relationships. In: DuBois, DL.; Karcher, MJ., editors. *Handbook of youth mentoring*. Thousand Oaks, CA: Sage; 2005. p. 143-157.
- Zullig, KJ.; Matthews-Ewald, MR. School climate: Definition, measurement, and application. In: Furlong, MJ., editor. *Handbook of positive psychology in schools*. 2nd. New York, NY, US: Routledge/Taylor & Francis Group; US; 2014. p. 313-328.

**Table 1**

Dimensions and Indicators of Safety, Stability, and Nurturance within the School Context

Domain	Dimensions	Indicators
Safety	Respectful school climate	<ul style="list-style-type: none"> <li>• lack of harassment or bullying of teachers</li> <li>• vandalism/destruction of school property</li> <li>• efforts around maintenance &amp; clean school environment</li> <li>• overall school climate values students, staff, &amp; parents</li> <li>• open communication</li> <li>• emotional intelligence</li> <li>• bystander behavior</li> <li>• respect for diversity</li> </ul>
	Personal safety	<ul style="list-style-type: none"> <li>• child to staff ratio or the teacher to staff ratio, group size criteria</li> <li>• staff training</li> <li>• supervision/discipline policies &amp; practices</li> <li>• absence of violence &amp; delinquency in the school</li> <li>• peer to peer bullying and cyberbullying</li> </ul>
	Physical safety	<ul style="list-style-type: none"> <li>• safe access to school</li> <li>• security measures in the school</li> <li>• links and relationships between the school, community, and police</li> <li>• evacuation plans and emergency preparedness policies</li> <li>• environmental safety</li> </ul>
Stability	Curriculum/policy stability	<ul style="list-style-type: none"> <li>• the order, organization, &amp; consistency of the curriculum</li> <li>• consistency of rules &amp; policies enforced</li> </ul>
	Staffing stability	<ul style="list-style-type: none"> <li>• staff turnover/retention</li> </ul>
	Stability of school attendance	<ul style="list-style-type: none"> <li>• number of days absent, schools attended this year, schools attended ever</li> <li>• policies on alternatives to suspension</li> <li>• residential stability in school neighborhood</li> </ul>
Nurturing	Supportive relationships	<ul style="list-style-type: none"> <li>• teacher-student relationship</li> <li>• teacher expectations</li> <li>• parent support and mentorship programs</li> <li>• peer relationships within school</li> <li>• parental involvement in the school</li> <li>• psychological and support services</li> <li>• school connectedness</li> </ul>
	Positive learning environment	<ul style="list-style-type: none"> <li>• developmentally appropriate, child centered curriculum</li> <li>• extracurricular activities and diverse curriculum</li> <li>• sense of community</li> </ul>

Table 2

Sample Measures for Safety within the School Ecology

Measure	Age/Grade	Dimensions	Indicators	Psychometrics	Other Constructs Assessed
AAUW Survey on Sexual Harassment (American Association of University Women, 1993)	Grades 8–12	Personal safety	•	None reported	
National Longitudinal Study on Adolescent Health (Add Health) In-Home Interview (National Longitudinal Study on Adolescent Health, 1998a); In-School Survey, Wave I (National Longitudinal Study on Adolescent Health, 1998a)	Grades 7–12	Respectful school climate Physical safety Personal safety	<ul style="list-style-type: none"> <li>• Feel safe in school</li> <li>• Victimization</li> <li>• Witnessing violence</li> <li>• Weapons at school</li> <li>• School policies on fighting</li> <li>• Visitor sign-in</li> <li>• Drug use in school</li> <li>• Security</li> <li>• Treated fairly by teachers</li> <li>• Feel safe in neighborhood</li> </ul>	Violence scale (alpha = .82; Resnick, et al., 1998)	Stability Nurturing
Chicago Public Schools Student Connection Survey (Chicago Public Schools, 2007)	Grades 6–12	Respectful school climate Personal safety	<ul style="list-style-type: none"> <li>• Safety/violence in school</li> <li>• Bullying, harassment</li> <li>• Teacher respect, listen to students</li> </ul>	None reported	Stability Nurturing
Colorado Youth Survey [CYS] (Cross, Mohajeri-Nelson, & Newman-Gonchar, 2007) from Communities that Care Survey (Arthur, Hawkins, Pollard, Catalano, & Baglioni Jr, 2002)	Grades K-12 (CYS) 6–11 <sup>th</sup> grade (COC)	Physical safety Respectful school climate	<ul style="list-style-type: none"> <li>• Commitment to school</li> <li>• Rewards for pro-social involvement (acknowledgment by teachers and parents for school involvement)</li> <li>• Feel safe in school</li> </ul>	Reward for Prosocial (alpha = .58–.62); Commitment (alpha = .71–.79)	
Healthy Environment Assessment Tool, version 2 (HealthySEAT, Environmental Protection Agency, 2007)	Depends on school district	Physical safety	<ul style="list-style-type: none"> <li>• Environmental hazards (e.g., pests, chemicals, mold)</li> <li>• Injury hazards</li> <li>• Emergency response plan</li> <li>• Traffic</li> </ul>	None reported	



Measure	Age/Grade	Dimensions	Indicators	Psychometrics	Other Constructs Assessed
National Crime Victimization Survey, School Crime Supplement (National Center for Education Statistics, 2009)	12–18 years	Respectful school climate Personal safety	<ul style="list-style-type: none"> <li>Experiences &amp; perceptions of crime (on school grounds, bus, on way/ from school)</li> <li>School crime prevention</li> <li>Weapons or gangs in school</li> <li>Hate-related words and graffiti in school</li> <li>Bullying and cyberbullying</li> <li>Drug and alcohol availability in school</li> <li>Fear of victimization</li> </ul>	item-level analysis; available from <a href="http://www.bjs.gov/content/pub/pdf/iscs14.pdf">http://www.bjs.gov/content/pub/pdf/iscs14.pdf</a>	
National Survey of Children's Health (U.S. Department of Health and Human Services, Health Resources and Services Administration, & Maternal and Child Health Bureau, 2009)	6–17 years	Physical safety	<ul style="list-style-type: none"> <li>Feel safe in school</li> </ul>	None for these items	Nurturing
National Survey on Children's Exposure to Violence, NatSCEV, (Finkelhor, Turner, Ormrod, & Hamby, 2009)	0–17 years	Respectful school climate Physical safety Personal safety	<ul style="list-style-type: none"> <li>Victimization and violence at school</li> <li>Bullying</li> <li>Bomb threats to the school</li> <li>School property damage</li> <li>School violence</li> </ul>	None available	Nurturing
National Youth Survey (Elliott, Huizinga, & Morse, 1986)	11–17 years	Respectful school climate Personal safety	<ul style="list-style-type: none"> <li>Violence and delinquency (e.g., hit teacher, destroyed school property)</li> </ul>	Test-retest reliability (.70–.95); Good discriminant validity & concurrent validity with official court records	
Profiles (Balaji et al., 2008)	Grades 9–12	Physical safety	<ul style="list-style-type: none"> <li>School safety policies (e.g., signing in)</li> </ul>	None reported	
School Health Policy Surveillance System, SHPSS (Kyle et al., 2007)	Elementary-High school	Physical safety Personal safety	<ul style="list-style-type: none"> <li>School policies and education on: <ul style="list-style-type: none"> <li>school environment</li> <li>violence prevention</li> </ul> </li> </ul>	Good validity; Test-retest reliability (kappa 23%–88.5%; Brener, Kann, & Smith, 2003)	Nurturing

Measure	Age/Grade	Dimensions	Indicators	Psychometrics	Other Constructs Assessed
			<ul style="list-style-type: none"> <li>• substance use</li> <li>• safety</li> <li>• physical school environment</li> <li>• school climate</li> </ul>		
School Safety Questionnaire (Hunter et al., 2003)	6 & 8 years	Physical safety Personal safety	<ul style="list-style-type: none"> <li>• Violence</li> <li>• Neighborhood safety</li> <li>• Weapons</li> <li>• Discipline</li> <li>• Gangs</li> </ul>	None reported	
School Experience Survey (Frey et al., 2005)	Grades 3–5	Personal safety	<ul style="list-style-type: none"> <li>• Bullying (victimization &amp; perpetration)</li> <li>• Adult responsiveness to bullying</li> <li>• Bullying responsibility</li> </ul>	Subscales alphas range .76 to .88	
School Survey on Crime and Safety (National Center for Education Statistics, 2009)	Grades K–12	Respectful school climate Physical safety Personal safety	<ul style="list-style-type: none"> <li>• School practices and programs related to student safety/security</li> <li>• Crime prevention</li> <li>• Number of crime/violence incidents</li> <li>• Disciplinary actions</li> <li>• Neighborhood crime</li> </ul>	None reported	Nurturing
Social & Health Assessment (Weissberg, Voyce, Kasprow, Arthur, & Shriver, 1991)	Middle School	Physical safety Personal safety	<ul style="list-style-type: none"> <li>• Exposure to violence/delinquency in school,</li> <li>• Weapons</li> </ul>	Delinquency scale (alpha =.87)	
Youth Risk Behavior Surveillance System [YRBSS] (Brener et al., 2002)	Grades 9–12	Personal safety Physical safety	<ul style="list-style-type: none"> <li>• Weapons</li> <li>• Fighting</li> <li>• Property theft at school</li> <li>• Felt unsafe at school</li> <li>• Drug and alcohol use at school</li> </ul>	Moderate to good test-retest reliability (kappa 42%-71%)	

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Measure	Age/Grade	Dimensions	Indicators	Psychometrics	Other Constructs Assessed
Victimization Scale (Nadel, Spellman, Alvarez-Canino, Lausell-Bryant, & Landsberg, 1996)	Grades 6–8	Personal safety	<ul style="list-style-type: none"><li>• Victimization and witnessing victimization at school (verbal, with weapon, sexual harassment)</li></ul>	None reported.	

**Table 3**

Sample Measures for Stability within the School Ecology

Measure	Age/Grade	Dimensions	Indicators	Psychometrics	Other Constructs Assessed
National Longitudinal Study on Adolescent Health (Add Health) In-Home Interview (Section 5: Academics and Education; National Longitudinal Study on Adolescent Health, 1998a)	Grades 7–12	Stability of school attendance	• Attendance	None reported	Safety
Chicago Public Schools Student Connection Survey (Chicago Public Schools, 2007)	Grades 6–12	Policy stability	• Teacher expectations	None reported	Safety Nurturing
Classroom Environment Scale (Trickett & Moos, 1973)	11–18 years	Curriculum stability	• Order and organization; activities clearly planned	Order & Organization subscale (alpha=0.85), subscales significantly discriminated among the 38 classrooms in the standardization sample	
The Communities that Care Survey (Arthur et al., 2002)	Grades 6–11	Stability of school attendance	• Neighborhood transitions and residential mobility	Internal consistency (alpha= .70-.72)	
School Attendance (National Forum on Education Statistics, 2009)	Grades K-12	Stability of school attendance	• Attendance	None on attendance alone	
Youth Asset Scale (Oman, Vesely, & Aspy, 2005)	Grades 7–12	Policy stability	• Clear expectations at school	Non-parental Adult Role Model scale (alpha =.74)	Nurturing

**Table 4**

Sample Measures for Nurturing within the School Ecology

Measure	Age	Dimensions	Indicators	Psychometrics	Other Constructs Assessed
National Longitudinal Study on Adolescent Health (Add Health) Wave I, (National Longitudinal Study on Adolescent Health, 1998b)	Grades 7-12	Supportive relationships Positive learning environment	<ul style="list-style-type: none"> <li>Feelings of belonging to school</li> <li>Feel close to people at school</li> <li>Extracurricular activities</li> </ul>	School connectedness (alpha = .76); Social belonging (alpha = .78); Teacher support (alpha = .63) (Resnick et al., 1998)	
California Healthy Kids School Climate Survey (CA Department of Education, 2009)	Grades K-12	Supportive Relationships Positive learning environment	<ul style="list-style-type: none"> <li>Supportive place for students &amp; staff</li> <li>Psychological and specialized services for students</li> <li>Opportunities diverse curriculum with opportunities for equal participation</li> </ul>	None reported	
Chicago Public Schools Student Connection Survey (Chicago Public Schools, 2007)	Grades 6-12	Supportive Relationships Positive learning environment	<ul style="list-style-type: none"> <li>Teacher support</li> <li>School connectedness</li> <li>Extracurricular opportunities</li> </ul>	None reported	Safety Stability
Classroom Environment Scale (Trickett & Moos, 1973)	11–18 years	Supportive relationships Positive learning environment	<ul style="list-style-type: none"> <li>Involvement</li> <li>Affiliation</li> <li>Teacher support</li> </ul>	Alphas range .74 to .85 & good discriminate validity across classrooms	
National Survey on Children's Exposure to Violence (NatSCEV; Finkelhor, Turner, Ommrod, & Hamby, 2009)	0–17 years	Supportive relationships	<ul style="list-style-type: none"> <li>Support services</li> <li>Parent involvement</li> </ul>	None available	Safety
National Survey of Children's Health (U.S. Department of Health and Human Services, Health Resources and Services Administration, & Maternal and Child Health Bureau, 2009)	6–17 years	Positive learning environment Physical safety, (Safety)	<ul style="list-style-type: none"> <li>School engagement</li> <li>Extracurricular activities,</li> </ul>	None for these items	Safety
Parent & Family Involvement in Education Survey of the 2003 National Household Education Surveys Program (Carey, Lewis, Farris, & Burns, 1998)	Grades K-8	Supportive relationships	<ul style="list-style-type: none"> <li>Communications between school &amp; parent</li> <li>Activities/parent participation informing about children's performance</li> <li>Volunteer activities available/parent participation</li> </ul>	None available	

Measure	Age	Dimensions	Indicators	Psychometrics	Other Constructs Assessed
			<ul style="list-style-type: none"> <li>• Parental decision-making</li> <li>• Efforts to increase parent involvement</li> </ul>		
Parents' Perceptions of General Invitations for Involvement from the School Scale, (Hoover-Dempsey & Sandler, 2005)	Grades K-6	Supportive relationships	<ul style="list-style-type: none"> <li>• Parental comfort with the school</li> <li>• Parent-school communications</li> </ul>	Reliability (alpha=.83, Walker, Wilkins, Dallaire, & Hoover-Dempsey, 2005)	
Parent-Teacher Involvement Questionnaire: Parent or Teacher (PTIQ) (Conduct Problems Prevention Research, 1992; Conduct Problems Prevention Research Group, 1991)	Grades K-7	Supportive relationships	<ul style="list-style-type: none"> <li>• Quality of parent-teacher relationship</li> <li>• Parent involvement and volunteering at school</li> <li>• Parent endorsement of school</li> <li>• Parent-teacher contact</li> </ul>	Alpha = .77-.91	
School Health Policy Surveillance System, SHPSS (Kyle et al., 2007)	Elementary -High school	Supportive relationships	<ul style="list-style-type: none"> <li>• Crisis preparedness response</li> <li>• School nurses</li> </ul>	Good validity; Test-retest reliability (kappa 23%-88.5%; Brener, Kann, & Smith, 2003)	Safety
School Sense of Community (Roberts, Hom, & Battistich, 1995)	Grades 5 <sup>th</sup> 6 <sup>th</sup>	Supportive relationships, = Positive learning environment Education	<ul style="list-style-type: none"> <li>• Caring and supportive interpersonal relationships</li> <li>• Autonomy and influence</li> </ul>	Good internal consistency (alpha = .91; Battistich & Hom, 1997)	
School Survey on Crime and Safety (National Center for Education Statistics, 2009)	Grades K-12	Supportive relationships	<ul style="list-style-type: none"> <li>• Parent and community involvement</li> <li>• Teacher training</li> </ul>	None reported	Safety
Youth Asset Scale (Oman, Vesely, & Aspy, 2005)	Grades 7-12	Supportive relationships	<ul style="list-style-type: none"> <li>• School connectedness</li> <li>• Feel close to people at school</li> <li>• Have an adult to talk to at school</li> </ul>	Adequate internal consistency for Non-parental Adult Role Model scale (alpha = .74)	Stability